

# Metal Industry Indicators

## Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

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February 1998

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The growth rates of most of the metal industry leading indexes continued to move lower in December and January. However, with the exception of the growth rate of the copper leading index, which fell to -3.9%, the growth rates of the other leading indexes still remain above +1.0%, implying continued slow growth for most metal industries in the near future. The metals price leading index fell in November and December, the latest months for which it is available. The movement of this leading index and the increasing inventories for nonferrous metal products point to flat or possibly declining growth for most metal prices in the coming months.

The **primary metals leading index** decreased 0.7% in January to 126.0 from a revised 126.9 in December. The index's 6-month smoothed growth rate, a compound annual rate that measures the near-term trend dipped to 1.1% from a revised 3.0% in December.

Three of the four available components decreased in January and the fourth component was unchanged. However, the picture of future primary metals activity based on the January primary metals leading index may be too pessimistic. More than half of the decline in the index was due to one component, the S&P stock price index for diversified machinery. By mid-February, however, that index had moved up to its highest level since last October. Although the average workweek in primary metals establishments, another available indicator, was unchanged in January, it equaled the longest workweek in the 51-year period for which these data are available.

While the stock price index was responsible for most of the January decline in the primary metals leading index, the trends of other leading indicators have also been pointing downward in recent months. New orders for primary metals have been weak since September, and the Purchasing Managers' Index, a broad measure of manufacturing activity, has generally been moving lower since last July. The trend of the primary metals leading index over the past few months suggests that growth in overall industry activity should continue at a slow pace in the near term, but growth could turn negative if U.S. manufacturing activity begins to decline.

The December **steel leading index** inched up 0.1% to 107.0, but its 6-month smoothed growth rate eased to 4.2% from a revised 4.9% in November. The largest positive contribution to the index came from deflated shipments of appliances, which reached an all-time high in December. The largest negative contributor was the S&P stock price index for steel companies. Based on the latest trend of the steel leading index, slow growth in domestic steel activity is likely to continue during the next few months.

The **aluminum mill products leading index** increased 0.9% in December to 146.8 from a revised 145.5 in November, and the index's 6-month smoothed growth rate moved up to 4.0% from

2.9% in November. Commercial and industrial construction contracts and net new orders for aluminum mill products increased significantly in December, recovering most, but not all, of their sizable decreases in November. The trend of the index's 6-month smoothed growth rate remains healthy and points to moderate growth for aluminum mill products activity in the months ahead.

In December, the **primary and secondary aluminum leading index** edged up 0.2% to 244.8 from a revised 244.4 in November. However, the index's 6-month smoothed growth rate slowed to 3.9% from 4.6% in November. Only two of the index's six components, the LME spot price for primary aluminum and deflated new orders for nonferrous and other primary metals, declined, but those declines were large enough to offset increases in the other four components. The growth rate of the primary and secondary aluminum leading index still signals increasing U.S. demand for aluminum. Competition from imports, though, may limit growth in domestic primary aluminum activity. (Tables and charts for the primary and secondary aluminum indexes are in separate file.)

The **copper leading index** dropped 0.7% to 119.3 in December from a revised 120.2 in November. Its growth rate slid to -3.9% in December from a revised -2.6% in November, marking the lowest growth rate for this index since mid-1995. As in November, the MII copper stock price index was the largest contributor to the index decline. The leading index points to very weak growth or possibly a decline in domestic copper activity in the coming months.

### Metals Price Leading Index Declines, Inventories Continue to Rise

Newly available data for the total leading index of the Organization for Economic Cooperation and Development (OECD) has resulted in downward revisions to the metals price leading index for October and November and has also pulled the December index lower. Based on revised data the metals price leading index has declined

steadily since last September. The index moved down 0.3% in December to 96.1 from a revised 96.4 in November. The index's 6-month smoothed growth rate dropped to -1.1% from a revised -0.4% in November.

The 6-month smoothed growth rates of the OECD leading index and deflated new orders for U.S. nonferrous metals were large negative contributors to the metals price leading index in December. Those negative contributions outweighed positive contributions from the growth rates of building permits for new housing and the deflated U.S. M2 money supply. The new information for the OECD leading index may be reflecting some of the impact of the East Asian countries on the global economy.

The growth rate of the deflated value of nonferrous metal products inventories held in the United States increased to 17.1% in Decem-

ber. This is the highest growth rate since July 1989. In the past, growth rates that high have usually occurred near the end of cyclical downturns in metal prices. This growth rate is a measure of changes in the supply of nonferrous metal products in the United States.

The growth rate of the metals price leading index has moved to just below -1.0% and is entering the range that normally signals a downward trend in metal prices. Also, the high growth rate of inventories of nonferrous metal products suggests an over supply of metals and weak growth in metal prices. Finally, uncertainty about the outlook of the East Asian economies will probably continue to depress growth in metal prices in the near term. It is important to recognize that the business cycle and inventories are only two factors in price determination. Other factors that affect prices include changes in metals production, speculation, strategic stock-piling, and production costs.

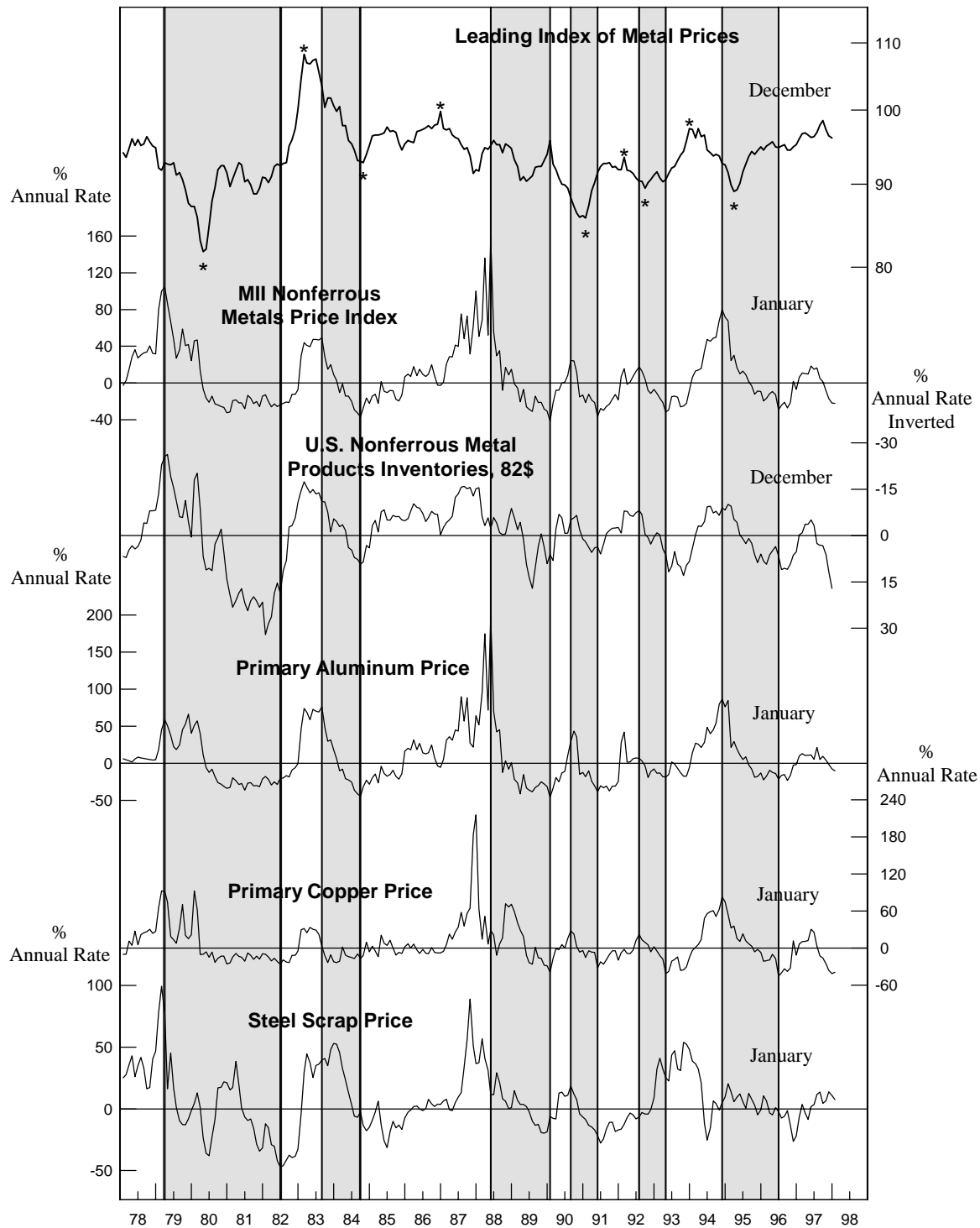
**An explanation of the indexes and the 6-month smoothed growth rates appears on page 12.**

**Table 1.**  
**Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index,**  
**Inventories of Nonferrous Metal Products, and Selected Metal Prices**

	Leading Index of Metal Prices (1967=100)	Six-Month Smoothed Growth Rates				
		MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982\$)	Primary Aluminum	Primary Copper	Steel Scrap
<b>1996</b>						
December	95.2r	-6.9	5.3	-2.0	-11.2	-21.8
<b>1997</b>						
January	96.0r	6.4r	-0.2	9.8	6.6	-6.6
February	96.7r	11.0	-0.9	12.7	10.5	3.7
March	96.8r	10.4	-3.7	10.1	11.2	-3.3
April	96.5r	9.7	-3.7	10.8	12.2	-8.5
May	96.2r	18.4	-5.1	11.0	30.7	2.0
June	96.3r	15.2r	-3.3	5.1	25.8	3.4
July	96.9	16.4r	2.6	21.0	3.4	11.6
August	97.9	5.1r	3.1	4.6	-12.5	13.6
September	98.5r	1.4r	3.3	9.3	-15.9	4.6
October	97.2r	-8.6	6.2	3.6	-25.3	6.7
November	96.4r	-17.0r	11.6r	-1.9	-35.9	13.8
December	96.1	-21.7	17.1	-7.9	-41.3	10.8
<b>1998</b>						
January	NA	-22.2	NA	-10.4	-38.8	7.6
<i>r - Revised</i>						
<b>Note:</b>	The components of the Leading Index of Metal Prices are the 6-month smoothed growth rates of the following: 1, the deflated value of new orders for nonferrous metals; 2, the OECD leading index, total; 3, the index of new private housing units authorized; and 4, the deflated value of U.S. M2 money supply. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.					
<b>Sources:</b>	U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); the Bureau of the Census; and the Organization for Economic Cooperation and Development (OECD).					

**CHART 1.**  
**LEADING INDEX OF METAL PRICES AND GROWTH RATES**  
**OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF**  
**NONFERROUS METAL PRODUCTS, AND SELECTED PRICES**

1967 = 100



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (\*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

Sources: U.S. Geological Survey (USGS) and Bureau of the Census, February 1998

**Table 2.**  
**The Primary Metals Industry Indexes and Growth Rates**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>1997</b>				
February	122.6r	4.0r	109.9	3.5
March	123.5r	4.9r	110.0	3.1
April	124.1	5.3	110.7	3.9
May	125.0	6.2r	110.5	2.9
June	125.4	6.2	111.0	3.3
July	126.1r	6.6r	111.2	3.0
August	127.3r	7.5r	111.8	3.5
September	127.2	6.4r	112.2r	3.6r
October	127.3r	5.5r	112.8r	4.3
November	126.8r	3.7r	113.3	4.4r
December	126.9r	3.0r	113.7	4.5
<b>1998</b>				
January	126.0	1.1	NA	NA

*r - Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 3.**  
**The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month**

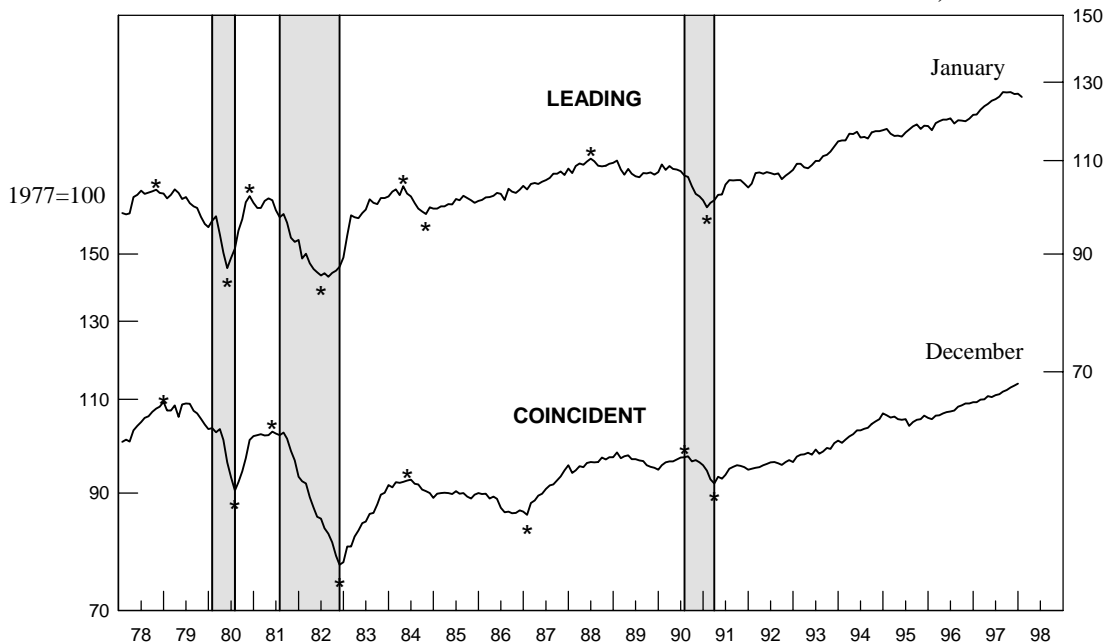
<b>Leading Index</b>	<b>December</b>	<b>January</b>
1. Average weekly hours, primary metals (SIC 33)	0.0	0.0
2. S&P stock price index, machinery, diversified	0.1r	-0.4
3. Ratio of price to unit labor cost (SIC 33)	0.0	NA
4. JOC metals price index growth rate	-0.1r	-0.2
5. New orders, primary metals, (SIC 33) 1982\$	-0.1	NA
6. Index of new private housing units authorized by permit	0.1	NA
7. Growth rate of U.S. M2 money supply, 1992\$	0.2	NA
8. Purchasing Managers' Index	-0.2r	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.0r	-0.8
<b>Coincident Index</b>	<b>November</b>	<b>December</b>
1. Industrial production index, primary metals (SIC 33)	0.1	0.1
2. Total employee hours, primary metals (SIC 33)	0.2	0.0
3. Value of shipments, primary metals, (SIC 33) 1982\$	-0.1r	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.3r	0.3

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, Center for International Business Cycle Research, Bureau of Labor Statistics, and Federal Reserve Board; 4, Journal of Commerce; 5, Bureau of the Census and U.S. Geological Survey; 6, Bureau of the Census and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

*NA: Not available      r - Revised*

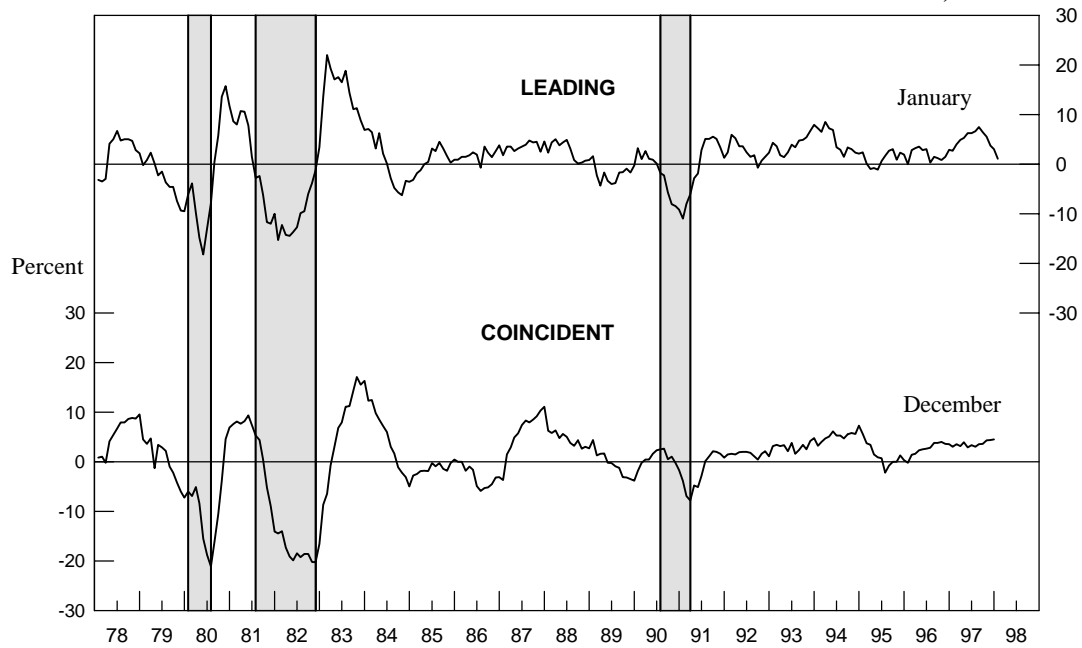
**Note:** A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

**CHART 2.**  
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1978-98** <sup>1977=100</sup>



Shaded areas are business cycle recessions. Asterisks (\*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

**CHART 3.**  
**PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1978-98** <sup>Percent</sup>



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

**Table 4.**  
**The Steel Industry Indexes and Growth Rates**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>1997</b>				
January	102.8r	0.9r	99.2	1.8
February	103.5	2.0	99.0	1.3
March	104.0r	2.8	99.2	1.4
April	103.8	2.2r	99.7	2.1
May	103.8r	2.1	99.4	1.2
June	104.5	3.3	99.6	1.4
July	104.1r	2.5r	99.5	1.0
August	106.0r	5.6r	99.8	1.4
September	106.7	6.2	100.5	2.4
October	106.7r	5.4r	100.7	2.7
November	106.9r	4.9r	100.8	2.5r
December	107.0	4.2	101.4	3.2

*r - Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 5.**  
**The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month**

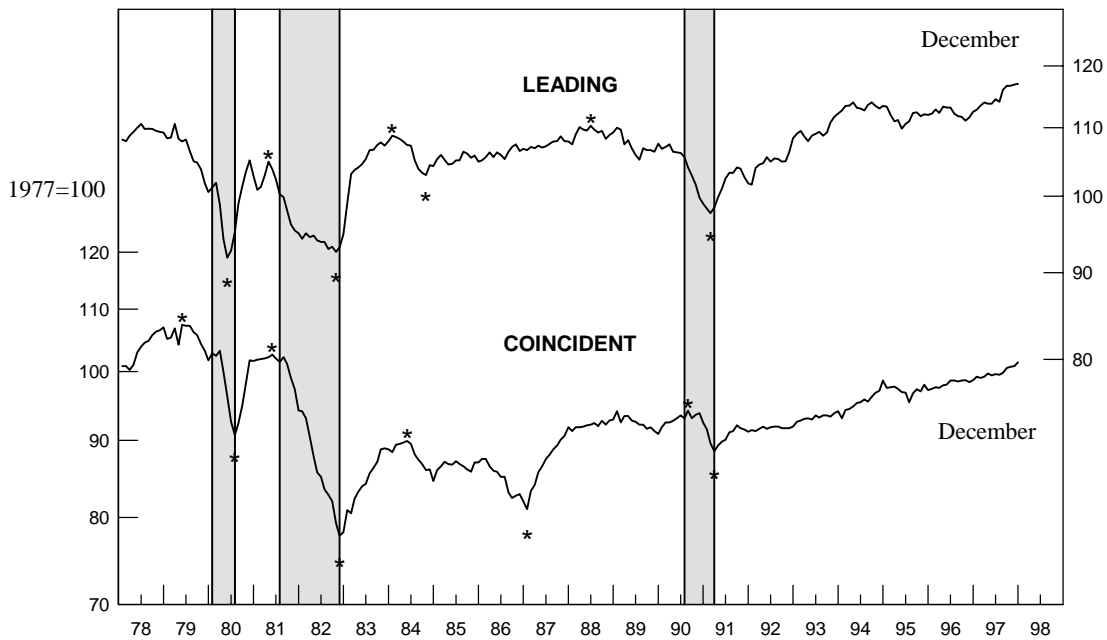
<b>Leading Index</b>	<b>November</b>	<b>December</b>
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	0.0	0.2
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982\$, (SIC 331)	0.1r	0.0
3. Shipments of household appliances, 1982\$	0.0r	0.4
4. S&P stock price index, steel companies	-0.3	-0.4
5. Industrial production index for automotive products	0.5r	-0.2
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	0.1	0.0
7. Index of new private housing units authorized by permit	-0.1	0.1
8. Growth rate of U.S. M2 money supply, 1992\$	0.1	0.2
9. Purchasing Managers' Index	-0.1r	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.3r	0.2
<b>Coincident Index</b>		
1. Industrial production index, basic steel and mill products (SIC 331)	0.1	0.1
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982\$	-0.1r	0.3
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	0.0	0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.1	0.7

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, Bureau of the Census and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

*NA: Not available      r - Revised*

**CHART 4.**  
**STEEL: LEADING AND COINCIDENT INDEXES, 1978-97**

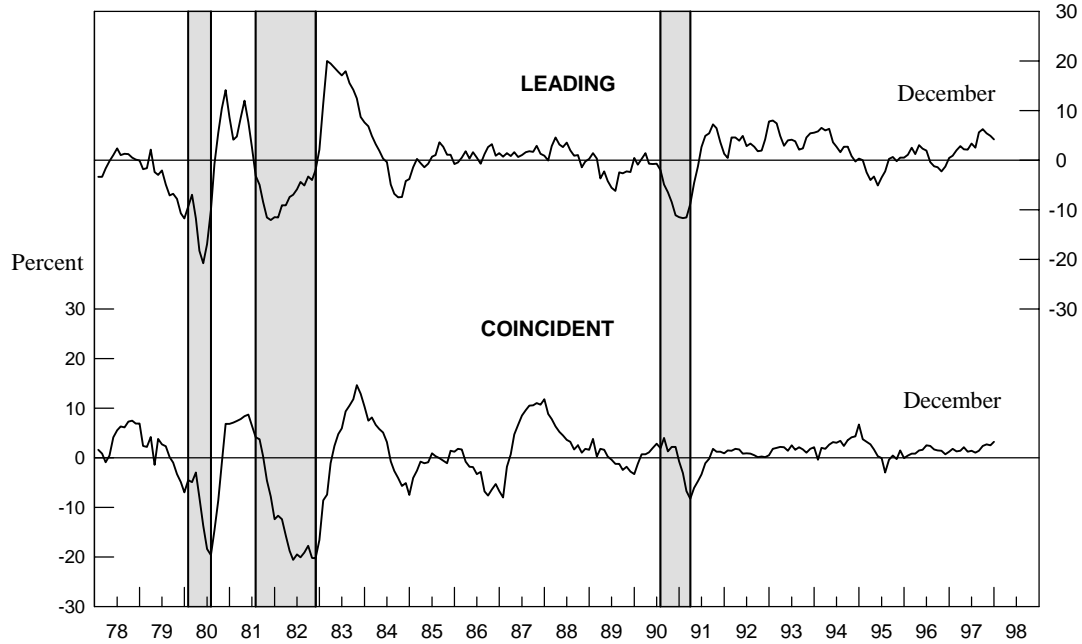
1977=100



Shaded areas are business cycle recessions. Asterisks (\*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

**CHART 5.**  
**STEEL: LEADING AND COINCIDENT GROWTH RATES, 1978-97**

Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

**Table 6.**  
**The Aluminum Mill Products Industry Indexes and Growth Rates**

	<b>Leading Index</b>		<b>Coincident Index</b>	
	<b>(1977 = 100)</b>	<b>Growth Rate</b>	<b>(1977 = 100)</b>	<b>Growth Rate</b>
<b>1997</b>				
January	140.9r	3.5r	123.8r	1.2r
February	142.8r	5.4	125.7r	3.5r
March	142.8r	4.7	126.1r	3.5
April	143.5r	4.9r	125.9	2.9
May	143.5r	4.3r	125.7r	2.2r
June	143.4	3.8	127.1r	3.9r
July	143.6r	3.5r	127.6r	4.0r
August	144.4	4.0r	126.8r	2.2r
September	146.6r	6.3	127.6r	3.0r
October	147.8	7.2r	127.6r	2.7r
November	145.5r	2.9	127.8r	1.0r
December	146.8	4.0	127.0	1.1

*r - Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 7.**  
**The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month**

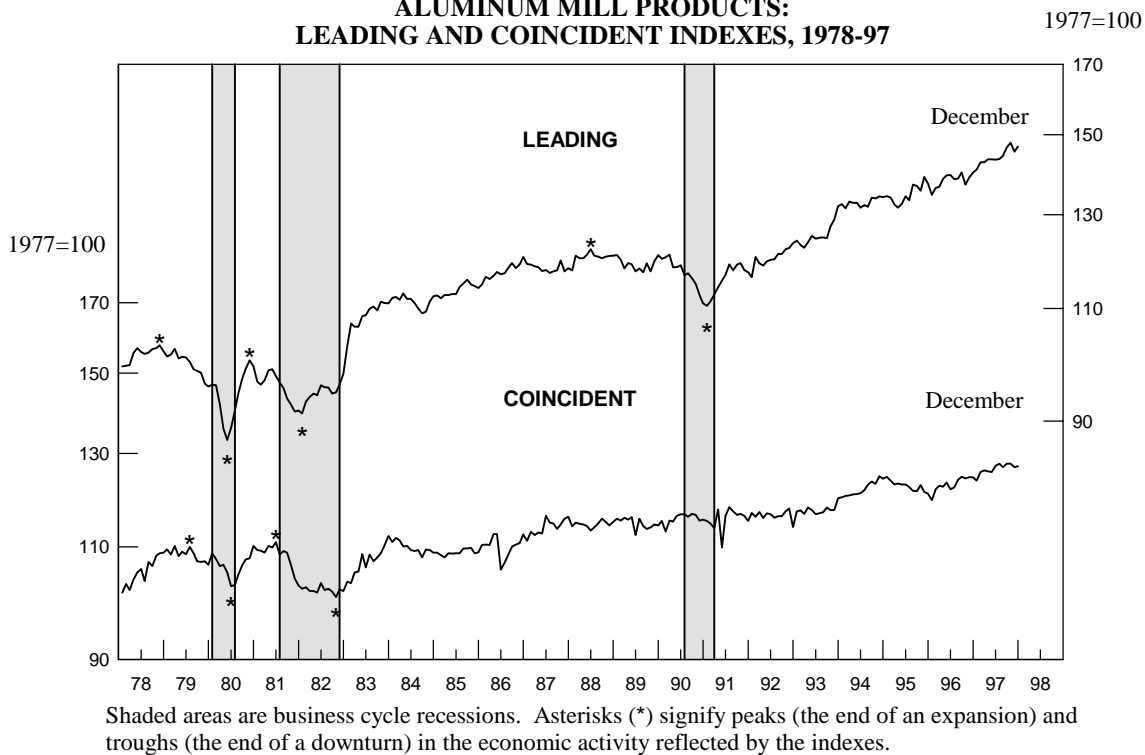
<b>Leading Index</b>	<b>November</b>	<b>December</b>
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	-0.6r	-0.3
2. Index of new private housing units authorized by permit	-0.2	0.2
3. Industrial production index for automotive products	0.6r	-0.3
4. Construction contracts, commercial and industrial (square feet)	-0.8	0.7
5. Net new orders for aluminum mill products (pounds)	-0.6	0.5
6. Growth rate of U.S. M2 money supply, 1992\$	0.2r	0.2
7. Purchasing Managers' Index	-0.2	-0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-1.5r	0.9
<b>Coincident Index</b>		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	0.0r	0.2
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	-0.4r	-0.4
3. Shipments of aluminum mill products (pounds)	-0.4r	0.4
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.7r	0.3

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey. All series are seasonally adjusted.

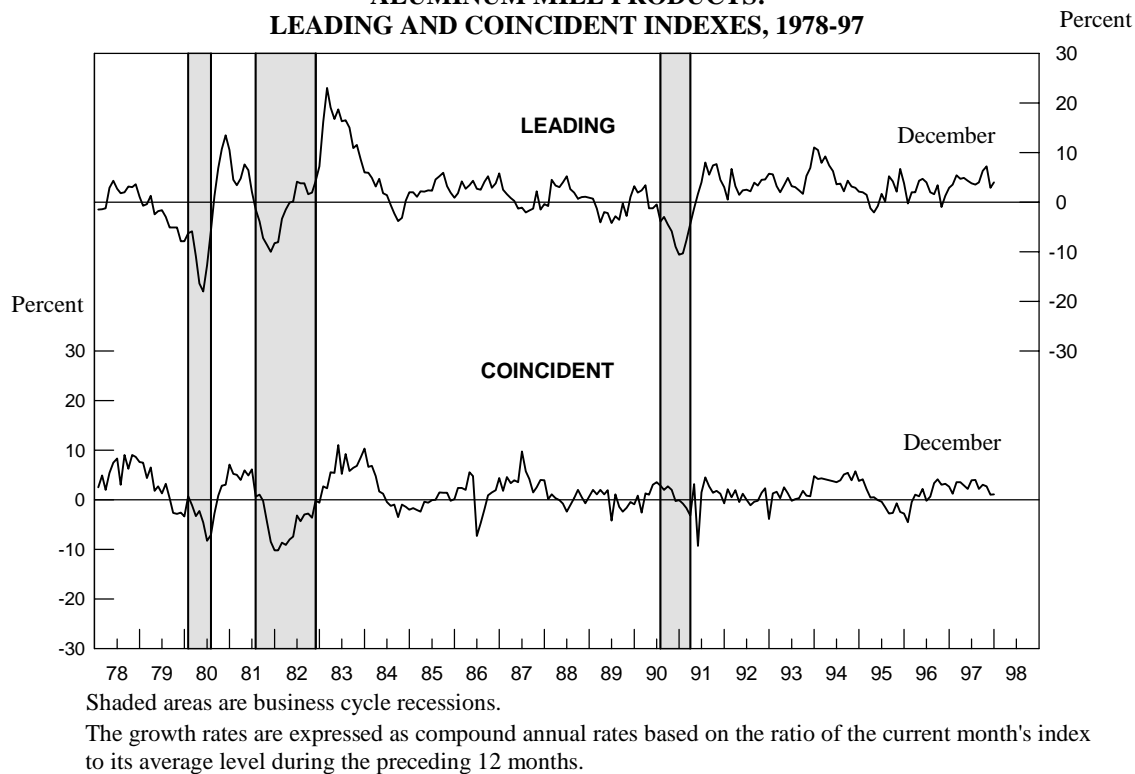
*NA: Not Available      r - Revised*



**CHART 6.  
ALUMINUM MILL PRODUCTS:  
LEADING AND COINCIDENT INDEXES, 1978-97**



**CHART 7.  
ALUMINUM MILL PRODUCTS:  
LEADING AND COINCIDENT INDEXES, 1978-97**



Source: U.S. Geological Survey, February 1998

**Table 8.**  
**The Copper Industry Indexes and Growth Rates**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>1997</b>				
January	120.2	1.9	114.1	0.8
February	122.0	4.2	114.4	1.1
March	123.5	6.1	114.2	0.6
April	121.8	2.7	114.6	1.0
May	122.7	3.9	113.6	-0.9
June	122.8	3.7	114.2	0.1
July	121.7	1.4	114.0	-0.4
August	122.3	1.9	114.8	1.0
September	123.4	3.2	115.5r	2.0r
October	121.7	0.0	115.9r	2.4r
November	120.2r	-2.6r	115.5r	1.7r
December	119.3	-3.9	115.7	1.7

*r - Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 9.**  
**The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month**

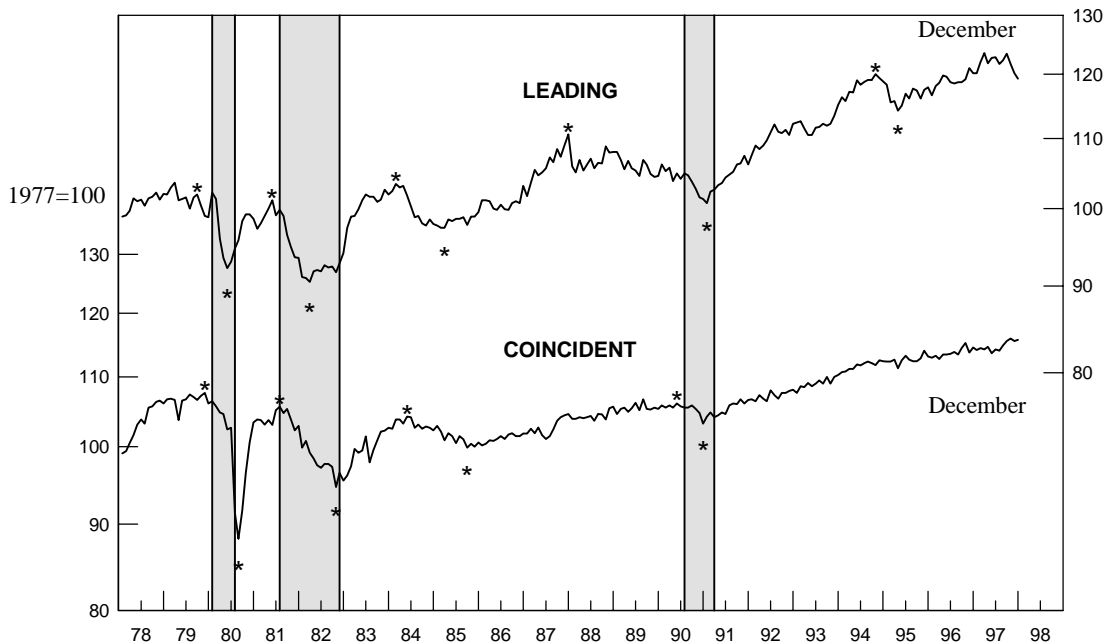
<b>Leading Index</b>	<b>November</b>	<b>December</b>
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	0.0	0.1
2. New orders, nonferrous and other primary metals, 1982\$	0.1r	-0.3
3. MII stock price index, copper companies	-0.8	-0.9
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	-0.2r	0.3
5. Growth rate of the LME spot price of primary copper	-0.2	-0.1
6. Index of new private housing units authorized by permit	-0.2	0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-1.3r	-0.7
<b>Coincident Index</b>		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	0.1	-0.1
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	0.0r	0.3
3. Copper refiners' shipments (short tons)	-0.5	-0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.3r	0.2

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Bureau of the Census and U.S. Geological Survey; 5, London Metal Exchange and U.S. Geological Survey; 6, Bureau of the Census and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3 and 5 of the leading index.

*NA: Not available      r - Revised*

**CHART 8.**  
**COPPER: LEADING AND COINCIDENT INDEXES, 1978-97**

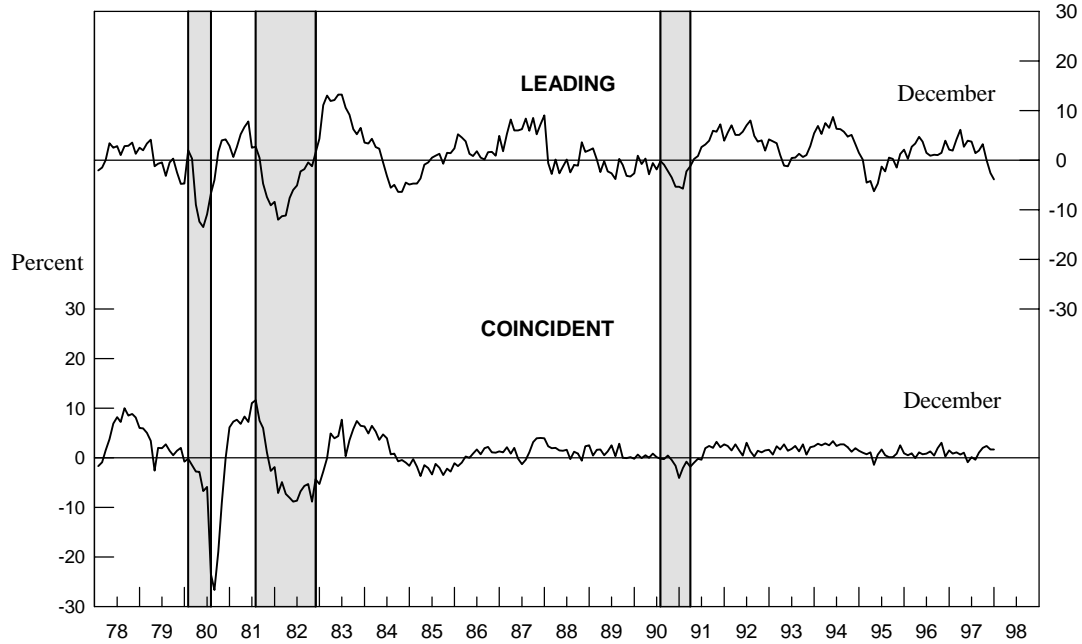
1977=100



Shaded areas are business cycle recessions. Asterisks (\*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

**CHART 9.**  
**COPPER: LEADING AND COINCIDENT GROWTH RATES, 1978-97**

Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

## Explanation

Each month, the U.S. Geological Survey tracks the effects of the business cycle on five U.S. metal industries by calculating and publishing composite indexes of leading and coincident indicators. Wesley Mitchell and Arthur Burns originated the cyclical-indicators approach for the economy as a whole at the National Bureau of Economic Research in the mid-1930's. Over subsequent decades this approach was developed and refined, mostly at the National Bureau, under the leadership of Geoffrey H. Moore.<sup>1</sup>

A business cycle can briefly be described as growth in the level of economic activity followed by a decline succeeded by further growth. These alternating periods of growth and decline do not occur at regular intervals. Composite indexes, however, can help determine when highs and lows in the cycle might occur. A composite index combines cyclical indicators of diverse economic activity into one index, giving decision makers and economists a single measure of how changes in the business cycle are affecting economic activity.

The indicators in the metal industry leading indexes historically give signals several months in advance of major changes in a coincident index, a measure of current metal industry activity. Indicators that make up the leading indexes are, for the most part, measures of anticipations or new commitments to various economic activities that can affect the metal industries in the months ahead.

Composite coincident indexes for the metal industries consist of indicators for production, shipments, and total employee hours worked. As such, the coincident indexes can be regarded as measures of the economic health of the metal industries.

Three of the metal industry coincident indexes, those for primary metals, steel, and aluminum mill products, reflect their classifications in the U.S. Standard Industrial Classification (SIC). The SIC is the main classification used by the United States government and industry in collecting and tabulating economic statistics. Two of the coincident indexes, one for copper and one for primary and secondary aluminum, are blends of two different copper and aluminum industries, respectively.

Of the five metal industries, primary metals is the broadest, consisting of twenty-six different metal processing industries. The steel, aluminum, and copper industries are parts of the primary metals industry.

The metal industry leading indexes turn before their respective coincident indexes an average of 9 months for primary metals, 8 months for steel, and 7 months for copper. The average lead time for the leading indexes of aluminum mill products and primary and secondary aluminum is 6 months.

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<sup>1</sup>Business Cycle Indicators, A monthly report from The Conference Board (March 1996).

The leading index of metal prices, also published in the Metal Industry Indicators, is designed to signal changes in a composite index of prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange. On average, this leading index indicates significant changes in price growth about 7 months in advance.

The growth rate used in the Metal Industry Indicators is a 6-month smoothed growth rate at a compound annual rate, calculated from a moving average. Moving averages smooth fluctuations in data over time so that trends can be observed. The 6-month smoothed growth rate is based upon the ratio of the latest monthly value to the preceding 12-month moving average.

$$\left[ \left( \frac{\text{current value}}{\text{preceding 12-month moving average}} \right)^{\frac{12}{6.5}} - 1.0 \right] * 100$$

Because the interval between midpoints of the current month and the preceding 12 months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.

The growth rates measure the near-term industry trends. They, along with other information about the metal industries and the world economy, are the main tools used to determine the outlook of the industries. A 6-month smoothed growth rate above +1.0% usually means increasing growth; a rate below -1.0% usually means declining growth.

**The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EST, Friday, March 20. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for Metal Industry Indicators on the World Wide Web is: <http://minerals.er.usgs.gov/minerals/pubs/mii/>**

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